

C.OC. # 173

11720 North Creek Pkwy N, Suite 400, Bothell, WA 98011-8244 East 11115 Montgomery, Suite B, Spokane, WA 99206-4776

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Work Order # M1 77 77 1 P160876

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PHONE: 907, 770-00 PROJECT NAME: Amchit	974 FAX:	170-0	0975	<u> </u>	P.O. N	UMBE		Z 10°		3					ST.	-	-	2 1	-]
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CLIENT SAMPLE IDENTIFICATION	SAMPLING DATE/TIME	000	BTEX/WAAP												MATRIX (W, S, O)	# OF CONT.		COMMENTS		NCA WO
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Bend 20332 Empire Avenue, Suite F-1, Bend, OR 97701-5711 541.383.9310 fax 541.382.7588

7 December, 2001

Anne Kranawetter Bristol Environmental & Engineering 2000 W International Airport C#1 Anchorage, AK 99502-1116

RE: Amchitka

Enclosed are the results of analyses for samples received by the laboratory on 07/14/01 16:27. If you have any questions concerning this report, please feel free to contact me.

This report was recreated from a previously issued final report in order to provide an electronic copy. The final report used for these electronic copies may have been previously issued as an amended report due to client requested changes to sample names, etc. No data has changed since submission of the previously issued final, or amended, report.

Sincerely,

Stephen Wilson

Environmental Group Leader

1112

Work Orders included in this report:

M107031



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Bristol Environmental & Engineering Project: Amchitka 2000 W International Airport C#1 Project Number: 21090

Reported:

07/24/01 15:48

Anchorage, AK 99502-1116 Project Manager: Anne Kranawetter

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
01AMF701SL	M107031-01	Soil	07/14/01 10:40	07/14/01 16:27
01AMF702SL	M107031-02	Soil	07/14/01 10:45	07/14/01 16:27

COC #173

Ni will be reported from fix lab.

North Creek Analytical - Mobile Lab



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Bristol Environmental & Engineering 2000 W International Airport C#1

Project: Amchitka
Project Number: 21090

Reported:

Anchorage, AK 99502-1116

Project Manager: Anne Kranawetter

07/24/01 15:48

Diesel Hydrocarbons (C10-C25) per AK102 North Creek Analytical - Mobile Lab

Analyte	Result	Reporting Limit	Units	Dilution	Method	Prepared	Analyzed	Batch	Notes
01AMF701SL (M107031-01) Soil					Sampled: 07	/14/01 Rece	eived: 07/14/	01	
Diesel Range Organics	ND	150	mg/kg dry	1	AK 102	07/15/01	07/15/01	0107056	
Surr: 1-Chlorooctadecane	86.0 %	50-150							
Surr: Triacontane	86.3 %	50-150							
01AMF702SL (M107031-02) Soil					Sampled: 07	/14/01 Rece	eived: 07/14/	01	
Diesel Range Organics	ND	150	mg/kg dry	1	AK 102	07/15/01	07/15/01	0107056	
Surr: 1-Chlorooctadecane	68.0 %	50-150							
Surr: Triacontane	91.0 %	50-150							

North Creek Analytical - Mobile Lab



Anchorage, AK 99502-1116

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Bristol Environmental & Engineering Project: Amchitka 2000 W International Airport C#1 Project Number: 21090

Reported: 07/24/01 15:48

BTEX,MTBE and Naphthalene per EPA Method 8021B

North Creek Analytical - Mobile Lab

Project Manager: Anne Kranawetter

Analyte	Result	Reporting Limit	Units	Dilution	Method	Prepared	Analyzed	Batch	Notes
01AMF701SL (M107031-01) Soil					Sampled: 07/1	4/01 Rece	ived: 07/14/	01	
Benzene	ND	0.0571	mg/kg dry	50	!1B BTEX/MT	07/16/01	07/16/01	0107064	
Toluene	ND	0.228	"	"	"	"	"	"	
Ethylbenzene	ND	0.228	"	"	"	"	"	"	
Xylenes (total)	ND	0.456	"	"	"	"	"	"	
Naphthalene	ND	2.28	"	"	"	"	"	"	
Surr: 4-BFB	88.7 %	50-150							
01AMF702SL (M107031-02) Soil					Sampled: 07/1	4/01 Rece	ived: 07/14/	01	
Benzene	ND	0.0573	mg/kg dry	50	!1B BTEX/MT	07/16/01	07/16/01	0107064	
Toluene	ND	0.229	"	"	"	"	"	"	
Ethylbenzene	ND	0.229	"	"	"	"	"	"	
Xylenes (total)	ND	0.458	"	"	"	"	"	"	
Naphthalene	ND	2.29	"	"	"	"	"	"	
Surr: 4-BFB	86.1 %	50-150							

North Creek Analytical - Mobile Lab



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Bristol Environmental & Engineering 2000 W International Airport C#1

Project: Amchitka
Project Number: 21090

Reported:

Anchorage, AK 99502-1116

Project Manager: Anne Kranawetter

07/24/01 15:48

Total Metals per EPA 6000/7000 Series Methods North Creek Analytical - Mobile Lab

Analyte	Result	Reporting Limit	Units	Dilution	Method	Prepared	Analyzed	Batch	Notes
01AMF701SL (M107031-01) Soil					Sampled: 07/	14/01 Rece	eived: 07/14/	01	
Arsenic	ND	2.25	mg/kg dry	1	EPA 6020	07/22/01	07/23/01	0107081	
Barium	11.7	2.25	"	"	"	"	"	"	
Cadmium	ND	2.25	"	"	"	"	"	"	
Chromium	18.1	2.25	"	"	"	"	"	"	
Lead	ND	2.25	"	"	"	"	"	"	
Selenium	ND	2.25	"	"	"	"	"	"	
Silver	ND	2.25	"	"	"	"	"	"	
Vanadium	63.0	2.25	"	"	"	"	"	"	
Mercury	ND	0.00424	"	"	EPA 1631	07/20/01	07/21/01	0107076	

North Creek Analytical - Mobile Lab



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Bristol Environmental & Engineering Project: Amchitka 2000 W International Airport C#1 Project Number: 21090

Reported:

07/24/01 15:48

Anchorage, AK 99502-1116 Project Manager: Anne Kranawetter

Physical Parameters per APHA/ASTM/EPA Methods North Creek Analytical - Mobile Lab

Analyte	Result	Reporting Limit	Units	Dilution	Method	Prepared	Analyzed	Batch	Notes
01AMF701SL (M107031-01) Soil					Sampled: 07/	14/01 Rece	ived: 07/14/	01	
% Solids	89.4	0.0100 %	by Weight	1	Gravimetric	07/15/01	07/16/01	0107063	
01AMF702SL (M107031-02) Soil					Sampled: 07/	14/01 Rece	eived: 07/14/	01	
% Solids	89.8	0.0100%	by Weight	. 1	Gravimetric	07/15/01	07/16/01	0107063	

North Creek Analytical - Mobile Lab



%REC

50-150

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96.0

Bristol Environmental & Engineering 2000 W International Airport C#1

Project: Amchitka Project Number: 21090

Reporting

24.0

Reported: 07/24/01 15:48

RPD

Anchorage, AK 99502-1116

Surr: Triacontane

Project Manager: Anne Kranawetter

Diesel Hydrocarbons (C10-C25) per AK102 - Quality Control

North Creek Analytical - Mobile Lab

Spike

25.0

Source

Analyte	Result	Limit Units	Level	Result	%REC	Limits	RPD	Limit	Notes
Batch 0107056 - 3545 ASE									
Blank (0107056-BLK1)			Prepare	d & Analy	zed: 07/1	5/01			
Diesel Range Organics	ND	150 mg/kg wet							
Surr: 1-Chlorooctadecane	22.1	"	23.7		93.2	50-150			
Surr: Triacontane	22.4	"	23.5		95.3	50-150			
LCS (0107056-BS1)			Prepare	d & Analy	zed: 07/1	5/01			
Diesel Range Organics	1120	150 mg/kg wet	1250		89.6	75-125			
Surr: 1-Chlorooctadecane	25.6	"	23.7		108	50-150			
Surr: Triacontane	23.8	"	23.5		101	50-150			
LCS Dup (0107056-BSD1)			Prepare	d & Analy	zed: 07/1	5/01			
Diesel Range Organics	1340	150 mg/kg wet	1250		107	75-125	17.9	20	

Surr: 1-Chlorooctadecane	17.5	"	23.7		73.8	50-150
Surr: Triacontane	21.3	"	23.5		90.6	50-150
Matrix Spike (0107056-MS1)	056-MS1) Source: M107030-01				zed: 07/1	5/01
Diesel Range Organics	1530	150 mg/kg dry	1330	ND	114	60-140
Surr: 1-Chlorooctadecane	16.9	"	25.2		67.1	50-150

North Creek Analytical - Mobile Lab



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Bristol Environmental & Engineering 2000 W International Airport C#1

Project: Amchitka Project Number: 21090

Reported:

Anchorage, AK 99502-1116

Project Manager: Anne Kranawetter

07/24/01 15:48

BTEX,MTBE and Naphthalene per EPA Method 8021B - Quality Control

North Creek Analytical - Mobile Lab

		Reporting		Spike	Source		%REC		RPD	
Analyte	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes

Blank (0107064-BLK1)				Prepared & A	Analyzed: 07/1	6/01
Benzene	ND	0.0250 n	ng/kg wet			
Toluene	ND	0.100	"			
Ethylbenzene	ND	0.100	"			
Xylenes (total)	ND	0.200	"			
Naphthalene	ND	1.00	"			
Surr: 4-BFB	2.61		"	2.50	104	50-150
LCS (0107064-BS1)				Prepared &	Analyzed: 07/1	6/01
Benzene	2.39	0.0250 n	ng/kg wet	2.50	95.6	69-138
Toluene	2.53	0.100	"	2.50	101	53-151
Ethylbenzene	2.52	0.100	"	2.50	101	61-141
Xylenes (total)	7.73	0.200	"	7.50	103	62-141
Naphthalene	3.09	1.00	"	2.50	124	65-135

North Creek Analytical - Mobile Lab



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Bristol Environmental & Engineering

2000 W International Airport C#1 Project Number: 21090

Reported:

Anchorage, AK 99502-1116 Project Manager: Anne Kranawetter

9.46

2.50

10.0

07/24/01 15:48

Total Metals per EPA 6000/7000 Series Methods - Quality Control

Project: Amchitka

	Nort	th Creek A	<u> Analytic</u>	al - Mo	bile Lal)				
Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 0107076 - EPA 1631										
Blank (0107076-BLK1)				Prepare	d: 07/20/0	1 Analyz	ed: 07/21/0)1		
Mercury	ND	0.00500	mg/kg wet							
LCS (0107076-BS1)				Prepare	d: 07/20/0	1 Analyz	ed: 07/21/0)1		
Mercury	0.0108	0.00500	mg/kg wet	0.0100		108	85-115			
Duplicate (0107076-DUP1)	So	urce: M1070	31-01	Prepare	d: 07/20/0	1 Analyz	ed: 07/21/0)1		
Mercury	ND	0.00500	mg/kg dry	•	ND	-		20.1	20	Q-06
Matrix Spike (0107076-MS1)	So	urce: M1070	31-01	Prepare	d: 07/20/0	1 Analyz	ed: 07/21/0)1		
Mercury	0.00875	0.00455	mg/kg dry	0.0102	ND	47.6	75-125			Q-02
Batch 0107081 - EPA 3050										
Blank (0107081-BLK1)				Prepare	d: 07/22/0	1 Analyz	ed: 07/23/0)1		
Arsenic	ND	2.50	mg/kg wet							
Barium	ND	2.50	"							
Cadmium	ND	2.50	"							
Chromium	ND	2.50	"							
Lead	ND	2.50	"							
Selenium	ND	2.50	"							
Silver	ND	2.50	"							
Vanadium	ND	2.50	"							
LCS (0107081-BS1)				Prepare	d: 07/22/0	1 Analyz	ed: 07/23/0)1		
Arsenic	11.2	2.50	mg/kg wet	10.0		112	80-120			
Barium	10.5	2.50	"	10.0		105	80-120			
Cadmium	11.2	2.50	"	10.0		112	80-120			
Chromium	9.83	2.50	"	10.0		98.3	80-120			
Lead	9.89	2.50	"	10.0		98.9	80-120			
Selenium	10.5	2.50	"	10.0		105	80-120			
Silver	11.4	2.50	"	10.0		114	80-120			

North Creek Analytical - Mobile Lab

Vanadium

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

80-120

94.6



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Bristol Environmental & Engineering 2000 W International Airport C#1

Project: Amchitka
Project Number: 21090

Reported: 07/24/01 15:48

Anchorage, AK 99502-1116

Project Manager: Anne Kranawetter

Total Metals per EPA 6000/7000 Series Methods - Quality Control

North Creek Analytical - Mobile Lab

		Reporting		Spike	Source		%REC		RPD	
Analyte	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes

Batch 0107081 - EPA 3050

Duplicate (0107081-DUP1)	Source	e: M107031-01	Prepared: 07/22/01 Analyz	ed: 07/23/01	
Arsenic	ND	2.50 mg/kg dry	ND	30.0	40
Barium	12.9	2.50 "	11.7	9.76	40
Cadmium	ND	2.50 "	ND		40
Chromium	20.7	2.50 "	18.1	13.4	40
Lead	ND	2.50 "	ND	26.5	40
Selenium	ND	2.50 "	ND		40
Silver	ND	2.50 "	ND	16.5	40
Vanadium	66.9	2.50 "	63.0	6.00	40
Matrix Spike (0107081-MS1)	Sourc	ce: M107031-01	Prepared: 07/22/01 Analyz	ed: 07/23/01	
Arcania	12.4	2.25 mg/kg dm	10.1 ND 107	75 125	

Matrix Spike (0107081-MS1)	Sour	ce: M107031-01	Prepare	d: 07/22/0	1 Analyz	zed: 07/23/01
Arsenic	12.4	2.25 mg/kg dr	y 10.1	ND	107	75-125
Barium	22.4	2.25 "	10.1	11.7	106	75-125
Cadmium	10.9	2.25 "	10.1	ND	108	75-125
Chromium	28.9	2.25 "	10.1	18.1	107	75-125
Lead	9.32	2.25 "	10.1	ND	81.3	75-125
Selenium	9.31	2.25 "	10.1	ND	92.2	75-125
Silver	10.3	2.25 "	10.1	ND	102	75-125
Vanadium	74.0	2.25 "	10.1	63.0	109	75-125

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Bristol Environmental & Engineering Project: Amchitka 2000 W International Airport C#1 Project Number: 21090

Project Manager: Anne Kranawetter 07/24/01 15:48

Notes and Definitions

Q-02 The spike recovery for this QC sample is outside of established control limits due to sample matrix interference.

Q-06 Analyses are not controlled on RPD values from sample concentrations less than 5 times the reporting limit.

DET Analyte DETECTED

Anchorage, AK 99502-1116

ND Analyte NOT DETECTED at or above the reporting limit

NR Not Reported

dry Sample results reported on a dry weight basis. MRLs are adjusted if %Solids are less than 50%.

wet Sample results reported on a wet weight basis (as received)

RPD Relative Percent Difference

North Creek Analytical - Mobile Lab

Items for Project Manager Review

LabNumber	Analysis	Analyte	Exception	
			Report recreated from: \\sisters\elmnt\Report\M107031 FINAL 07 24 01 1548.mdb	
0107076-DUP1	Hg Total CVAF 1631	Моналич	Default Report (not modified) O-06	
0107076-DUP1	Hg Total CVAF 1631	Mercury Mercury	Exceeds RPD limit	
0107076-MS1	Hg Total CVAF 1631	Mercury	Q-02	
0107076-MS1	Hg Total CVAF 1631	Mercury	Exceeds lower control limit	